

CLAIMS

1. Oriented strand board (OSB), comprising a core layer and two face layers, whereby at least the face layers comprise an adhesive composition, characterised in that the adhesive composition in at least one of the face layers comprises a resin composition comprising melamine, formaldehyde, optionally urea and optionally an aromatic hydroxyl compound, wherein the molar ratio of melamine to formaldehyde is 1:0.8 - 1:4.0, the molar ratio of melamine to urea is 1:0 - 1:2.0 and the molar ratio of melamine to aromatic hydroxyl compound is 1:0 - 1:2.0.
2. Oriented strand board according to claim 1, wherein the resin composition has a molar ratio of melamine to formaldehyde of 1:1 - 1:3.0, a molar ratio of melamine to urea of 1:0.05 - 1:1.5 and a molar ratio of melamine to aromatic hydroxyl compound of 1:0 - 1:1.0.
3. Oriented strand board according to claim 1 or 2, wherein the aromatic hydroxyl compound comprises phenol.
4. OSB according to any one of claims 1 – 3, wherein the core layer comprises an adhesive composition, whereby the adhesive composition in the core layer comprises a resin composition comprising melamine, formaldehyde, optionally urea and optionally an aromatic hydroxyl compound.
5. OSB according to claim 4, wherein the resin in the adhesive composition in the core layer has a molar ratio of melamine to formaldehyde of 1:0.8 - 1:9, a molar ratio of melamine to urea of 1:0 - 1:6, and a molar ratio of melamine to aromatic hydroxyl compound of 1:0 - 1:2.
6. OSB according to claim 5, wherein the resin in the adhesive composition in the core layer has a molar ratio of melamine to formaldehyde of 1:0.8 - 1:4 and a molar ratio of melamine to urea of 1:0 - 1:2.
7. Oriented strand board according to any one of claims 1-3, wherein the resin in the adhesive composition of the core layer is the same as the resin in the adhesive composition of at least one face layer according to any one of claims 1-3.
8. Oriented strand board according to any one of claims 1-7, wherein the amount of resin in the at least one face layer is 2.5-8 wt% dry resin/dry wood.
9. Oriented strand board according to any one of claims 4 - 7, wherein the amount of resin in the core layer is 2.5-8 wt% dry resin/dry wood.

10. Oriented strand board according to any one of claims 1 - 9, wherein the amount of urea in a face layer is 0-0.025 kg/kg face layer.
11. Oriented strand board according to claim 10, wherein the amount of urea in a face layer is 0.005-0.015 kg/kg face layer.
- 5 12. Oriented strand board (OSB), comprising a core layer and two face layers, whereby at least the core layer comprises an adhesive composition, characterised in that the adhesive composition in the core layer comprises a resin composition comprising melamine, formaldehyde, optionally urea and optionally an aromatic hydroxyl compound, wherein the molar ratio of melamine to formaldehyde is 1:0.8 - 1:9, the molar ratio of melamine to urea is 1:0 - 1:6, and the molar ratio of melamine to aromatic hydroxyl compound is 1:0 - 1:2.
- 10 13. OSB according to claim 12, wherein the resin in the adhesive composition of the core layer has a molar ratio of melamine to formaldehyde of 1:0.8 - 1:4 and a molar ratio of melamine to urea of 1:0 - 1:2.
- 15 14. OSB according to any one of claims 12 - 13, wherein the amount of resin in the core layer is 2.5-8 wt% dry resin/dry wood.
15. OSB according to any one of claims 12 - 14, wherein the amount of urea in the core layer is 0 - 0.025 kg/kg core layer.
- 20 16. Oriented strand board according to any one of claims 1 - 15, wherein the OSB has a thickness swell lower than 15 or 12% according to the OSB/3 or OSB/4 standard, respectively.
17. Oriented strand board according to any one of claims 1 - 15, wherein the OSB has an internal bond value after boiling according to the OSB/3 or OSB/4 standard.
- 25 18. Process for the preparation of an oriented strand board (OSB), comprising the steps of:
 - a) preparing an adhesive composition comprising a resin composition comprising melamine, formaldehyde, optionally urea and optionally an aromatic hydroxyl compound, wherein the molar ratio of melamine to formaldehyde is 1:0.8-4.0, the molar ratio of melamine to urea is 1:0-2.0 and the molar ratio of melamine to aromatic hydroxyl compound is 1:0-2.0;
 - b) treating wood strands with the adhesive composition;
 - 30 c) scattering adhesive-treated wood strands for a face layer, a core layer
- 35

on top of the face layer, and again a face layer on top of the core layer, whereby the wood strands of at least one face layer were treated with the adhesive composition prepared in a);

5 d) pressing the wood strands, whereby the adhesive composition is at least partially cured, to form an OSB.

19. Process for the preparation of an OSB according to claim 18, wherein the wood strands of the face layers and of the core layer were treated with an adhesive composition as prepared in step a).

20. Process for the preparation of an oriented strand board (OSB), comprising the steps of :

10 a) preparing an adhesive composition comprising a resin composition comprising melamine, formaldehyde, optionally urea and an aromatic hydroxyl compound, wherein the molar ratio of melamine to formaldehyde is 1:0.8 - 1:9, the molar ratio of melamine to urea is 1:0 - 1:6 and the molar ratio of melamine to aromatic hydroxyl compound is 1:0-2.0;

15 b) treating wood strands with the adhesive composition;

 c) scattering adhesive-treated wood strands for a face layer, a core layer on top of the face layer, and again a face layer on top of the core layer, whereby the wood strands of at least the core layer were treated with the adhesive composition prepared in a);

20 d) pressing the wood strands, whereby the adhesive composition is at least partially cured, to form an OSB.

21. Process according to claim 20, wherein the resin composition as used in step a) has a molar ratio of melamine to formaldehyde of 1:0.8 - 1:4, and a molar ratio of melamine to urea of 1:0 - 1:2.

25 22. Process according to any one of claims 18 - 21, wherein the resin composition as used in step a) has a solids content of 65 - 75%.

 23. Process according to any one of claims 20 - 22, wherein the wood strands of the face layers and of the core layer were treated with an adhesive composition as prepared in step a).

30 24. OSB, obtainable by the process of claim 22 or 23.